

## ABSTRACT

Human mesenchymal stromal cells can be induced to differentiate into oligodendrocytes and neurons, respectively. For these cell types, therefore, MSCs can be a therapeutic source, either *in vitro* or *in vivo*, in the context of  
5 treating pathologies of the central nervous system which are characterized by neuron loss, such as Parkinson's disease, Alzheimer's disease and stroke, as well as head trauma, or by dysfunction in ganglioside storage or demyelination, such as Tay-Sachs disease, G1 gangliosidosis, metachromatic leukodystrophy, and multiple sclerosis.